Reviewer’s report

Title: Incidence and cost of anal, penile, vaginal and vulva cancer in Denmark

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Reviewer: Patricia Goggin

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Comments about the article “Incidence and cost of anal, penile, vaginal and vulva cancer in Denmark”

Many jurisdictions are proceeding to cost-effectiveness studies in order to guide the establishment of their HPV vaccination policies. As the authors mention, less is known about the burden of other non-cervical cancers associated with HPV, particularly in terms of health care costs. This is one of the few studies that attempted to measure these costs. But because cost studies do not travel very well, their relevance for the scientific community at large lies as much as the method employed in doing so than on the results themselves.

The background section and objectives of the study are not expressed clearly and include details that are not relevant here, like the fact that HIV positive MSM have an increase rate of anal cancer, since the study does not report incidence rate for this group, nor presents trends in the incidence of anal cancer.

My main concern is about the Methods section, and that should be considered a major point for revision. It is somewhat difficult to follow. For example, cases were diagnosed in 2004-2007, but costs were available for years 2006, 2007 and 2008. How did the authors estimate the resource use in the first two years for patients diagnosed in 2004, or in the first year for patients diagnosed in 2005? Without a better understanding of the approach, it is difficult to assess the validity of the results, although the final results are well presented in Tables 3 and 4. It would have been interesting to see a list the main procedures and their relative costs, and maybe some intermediate results before and after correction for the costs incurred by the control population.

In the discussion section, the comparison of the cost estimates in this study seems to reflect primarily the method employed in the other studies. Hu and Goldie measured a lifetime cost based on an incidence model and the two other studies used a prevalence model to measure a yearly cost to estimate the global burden of disease in a given year, so none of them is really comparable. Can the authors comment about the preference of a method in view of the purpose of the study?

Other imprecision may be due to the writing style of the authors. I would recommend full editing before being published.

Other minor comments

For clarity, Table 1 should be Table 4 if it is called only in the discussion section.
In the discussion section, another limitation would be the restriction to other anogenital cancers and the exclusion of oropharyngeal cancers to complete the estimation of the burden of disease.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I have receive conference fees from Merck on one occasion in 2010.